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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,875

04/19/2005

Hironori Kobayashi

SIP-0201

4078

23353 7590 12/29/2006
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EXAMINER

MAKI, STEVEN D

ART UNIT

PAPER NUMBER

1733

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/29/2006

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/531,875

Applicant(s)

KOBAYASHI, HIRONORI

Examiner

Steven D. Maki

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>041905</u> . | 6) <input type="checkbox"/> Other: ____ |

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1) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Japan 406

3) **Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Japan 406 (JP 63-68406).**

The claimed tire is anticipated by the invention tire shown in figure 2 or the comparative tire shown in figure 5. See figures 2, 5, abstract, table 1 and partial translation provided by applicant.

Japan 727

4) **Claim 2 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Japan 727 (JP 6-344727).**

Japan 727, directed to preventing stone biting, preventing localized abrasion and enhancing driving stability, discloses a pneumatic tire for heavy load comprising a tread with four circumferential grooves wherein the sidewalls of the outer circumferential

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grooves are inclined at an angle alpha of 0-20 degrees (preferably 5-15 degrees) and the sidewalls of the inner circumferential grooves are inclined at an angle beta of 0-20 degrees (preferably 5-15 degrees). In examples 1-3, the angle alpha for the outer groove is 14.5 degrees (within the claimed range of -10 degrees to +20 degrees) and the angle beta for the inner groove is 13.5 degrees (within the claimed range of +10 to +20 degrees).

Maruoka et al

5) **Claim 1 is rejected under 35 U.S.C. 102(a), (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maruoka et al (WO 2003/059654).**

US 2005/0000613 is an English language equivalent to WO 2003/059654.

Maruoka et al, directed to suppressing uneven wear and equalizing the wear, discloses a heavy duty pneumatic tire comprising four circumferential grooves wherein when the tire is mounted on a regular rim, a regular internal pressure is charged into the tire and a normal load is applied to the tire, the total sum of ground contact force on the tire satisfies the following ratios: $P2c/P1a = 0.9$ to 1.05 , $P2e/P2c = 0.75$ to 1.0 , $P3c/P2e = 0.9$ to 1.2 , and $P3e/P3c = 0.8$ to 1.1 . In embodiment A2 in Table 1, the ratio of $P2e/P2c$ for the middle rib is 0.90 and the ratio $P3e/P3c$ for the shoulder rib is 0.96 . Each total sum of the ground contact force $P1a$, $P2c$, $P2e$, $P3c$ and $P3e$ can be obtained using a sheet body with a large number of sensors. See paragraph 46 of US 2005/0000613.

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Maruoka et al's ratio $P2e/P2c$ is the ratio of sum of ground contact force of right side of middle rib to sum of ground contact force of left side of middle rib. **The ratio $P2e/P2c$ for the middle rib (second rib) is 0.75-1.00 such as 0.90.** The ratio $P2e/P2c$ for Maruoka et al's middle / second rib generally corresponds to the "MIDDLE RIB GROUND CONTACT PRESSUE RATIO" of "a ratio of second-rib-outer edge ground-contact pressure to second-rib-middle ground-contact pressure" (Beo/Bc) to "a ratio of second-rib-inner edge ground-contact pressure to second-rib-middle ground-contact pressure" (Bei/Bc). **Claim 1 requires a "MIDDLE RIB GROUND CONTACT PRESSUE RATIO (Beo/Bc) / (Bei/Bc)" of "0.75 to 0.95" to "0.80 to 1.00".** Applicant's third example demonstrates a "MIDDLE RIB GROUND CONTACT RATIO (Beo/Bc) / (Bei/Bc)" of $0.80 / 0.90 = \underline{0.89}$.

Maruoka et al's ratio " $P3e/P3c$ " is the ratio of sum of ground contact force of right side of shoulder rib to sum of ground contact force of left side of shoulder rib. **The ratio $P3e/P3c$ for the shoulder rib is 0.80-1.10 such as 0.96.** The ratio $P3e/P3c$ for Maruoka et al's shoulder rib generally corresponds to the "SHOULDER GROUND CONTACT PRESSUE RATIO" of "a ratio of shoulder-rib-outer edge ground-contact pressure to shoulder-rib-middle ground-contact pressure" (Ceo/Cc) to "a ratio of shoulder-rib-inner edge ground-contact pressure to shoulder-rib-middle ground-contact pressure" (Cei/Cc). **Claim 1 requires a "SHOULDER RIB GROUND CONTACT PRESSUE RATIO (Ceo/Cc)/(Cei/Cc)" of "0.0.85-1.00" to "0.80 to 0.95".** Applicant's third example demonstrates a "SHOULDER RIB GROUND CONTACT RATIO" of $0.85 / 0.90 = \underline{0.94}$.

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With respect to "a ratio of center-rib-edge ground contact pressure to center-rib-middle ground-contact pressure" (A_e/A_c) being 0.80 to 1.00, Maruoka et al teaches that P_{2c}/P_{1a} is 90-105% wherein P_{1a} is the sum of ground contact pressure for the right side of the center rib. In example 3, applicant's ratio of (B_{ei}/B_c) to (A_e/A_c) is $0.90/0.89 = 1.01$. In Embodiment A2, Maruoka et al's ratio of P_{2c}/P_{1a} is 0.93. In Embodiment A1, Maruoka et al's ratio P_{2c}/P_{1a} is 1.03.

The claimed tire is anticipated by Maruoka et al. The claimed ratios of ground contact pressure are inherent in Maruoka et al's tire such as embodiment A2. In any event: It would have been obvious to one of ordinary skill in the art to provide Maruoka et al's four groove heavy duty pneumatic tire such that the tire satisfies the claimed ground contact ratios since Maruoka et al teaches suppressing uneven wear and equalizing the wear by providing a heavy duty pneumatic tire comprising four circumferential grooves such that when the tire is mounted on a regular rim, a regular internal pressure is charged into the tire and a normal load is applied to the tire, the total sum of ground contact force on the tire satisfies the following ratios: $P_{2c}/P_{1a} = 0.9$ to 1.05 , $P_{2e}/P_{2c} = 0.75$ to 1.0 , $P_{3c}/P_{2e} = 0.9$ to 1.2 , and $P_{3e}/P_{3c} = 0.8$ to 1.1 .

6) Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruoka et al in view of Japan 727 (JP 6-344727).

As to claims 2 and 3, it would have been obvious to incline the walls of the circumferential grooves of Maruoka et al's heavy duty tire such that they are inclined as claimed since Japan 727 suggests preventing stone biting, preventing localized abrasion and enhancing driving stability by providing the four circumferential grooves of

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a pneumatic tire for heavy load such that the sidewalls of the outer circumferential grooves are inclined at an angle α of 0-20 degrees (preferably 5-15 degrees) and the sidewalls of the inner circumferential grooves are inclined at an angle β of 0-20 degrees (preferably 5-15 degrees). In examples 1-3, the angle α for the outer groove is 14.5 degrees (within the claimed range of -10 degrees to +20 degrees) and the angle β for the inner groove is 13.5 degrees (within the claimed range of +10 to +20 degrees).

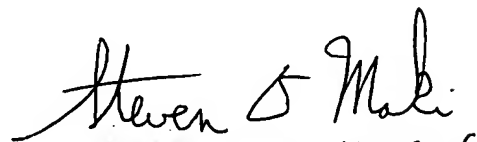
Remarks

- 7) The remaining references are of interest.
- 8) No claim is allowed.
- 9) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki
December 23, 2006


STEVEN D. MAKI 12-23-06
PRIMARY EXAMINER